UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,313	03/30/2000	Chung-Ho Huang	LMRX-P079/P0602	7930

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ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/539,313	HUANG ET AL.
	Examiner	Art Unit	
	David E. England	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 July 2005</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1 – 9 and 16 – 18</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 – 9 and 16 – 18</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>03/30/2000</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 9 and 16 – 18 are presented for examination.

Drawings

2.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "reportable specification provides sufficient sensor information so that a sensor driver is not used" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The

objection to the drawings will not be held in abeyance.

3.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

5.   Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the

written description requirement. The claim(s) contains subject matter which was not described

in the specification in such a way as to reasonably convey to one skilled in the relevant art that

the inventor(s), at the time the application was filed, had possession of the claimed invention.

6.   The limitation of, "the reportable specification provides sufficient sensor information so

that a sensor driver is not used," is not found in the specification nor is it stated what is

considered "sufficient" enough for the sensor driver not to be used.

7.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

8.   Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

9.   The term "sufficient" in claim 18 is a relative term which renders the claim indefinite.

The term "sufficient" is not defined by the claim, the specification does not provide a standard

for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably

apprised of the scope of the invention. It is not stated what is considered "sufficient" enough for

the sensor driver not to be used in the Applicant's specification. Applicant is asked to point out

in the specification what makes data "sufficient" enough for one to not send a sensor driver.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

11.   Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kail (6225901) in

view of Nakamura et al. (6233492) (hereinafter Nakamura) in further view of Steen, III et al.

(6510350) (hereinafter Steen).

12.   As per claim 1, Kail teaches a computer implemented method for communicating

between a computing system of a process module, and a first sensor, comprising the steps of:

13.   initializing the computing system of the process module, (e.g. col. 6, line 49 – col. 7, line

20);

14.   transmitting a connect message from the first sensor to the computing system of the

process module, (e.g. col. 6, line 49 – col. 7, line 20);

15.   transmitting a command to get reportable specification from the computing system of the

process module to the first sensor, (e.g. col. 6, line 49 – col. 7, line 59 & col. 7, line 60 – col. 8,

line 57); and

16.   automatically transmitting, upon receiving the command to get reportable specification, a

reportable specification message from the first sensor to the computing system of the process

module, (e.g. col. 7, line 21 – col. 8, line 28 & col. 7, line 60 – col. 8, line 57);

17.   thereafter receiving, using the computing system of the processing module and the

reportable specification message received from the first sensor, sensor data from the first sensor,

(e.g. col. 7, line 21 – col. 8, line 28 & col. 7, line 60 – col. 8, line 57). Kail does not teach the

process module having a process chamber, initializing the first sensor, which is able to measure a

first parameter in the process chamber; and

18.   a reportable specification with informs the process module computing system of the type

of data that will be provided from the first sensor, the reportable specification message being

configured to inform the computing system of the processing module at least a data type

specification transmitted by the first sensor.

19.   Nakamura teaches the process module having a process chamber, initializing the first

sensor, which is able to measure a first parameter in the process chamber, (e.g. col. 3, line 35 –

col. 4, line 67). It would be obvious to one skilled in the art at the time the invention was made to

combine Nakamura with Kail because it would be more efficient for the computing system to

utilize a network type connection so the user can operate the sensor and process chamber form

different locations in a building.

20.   Steen teaches a reportable specification with informs the process module computing

system of the type of data that will be provided from the first sensor, the reportable specification

message being configured to inform the computing system of the processing module at least a

data type specification transmitted by the first sensor, (e.g. col. 3, lines 33 – 56, *"sends request*

to update a field parameter or request for up-to-date sensor data..."). It would be obvious to one

skilled in the art at the time the invention was made to combine Steen with the combine system

of Kail and Nakamura because if a sensor can sense multiple types of information, but the

system only needs one type from said sensor, the sensor be designated as a specific type of

sensor, (example: only sense temperature). This could make for a faster system since it is not

required for the sensor to constantly be reformatted for each different element it can sense.

Furthermore, updating information in a database enables the user to view sensor information

either on-demand, real time or near real time.

21.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kail, Nakamura,

Steen, as applied to claim 1 above, and in further view of Kosugi et al. (6204768) (hereinafter

Kosugi).

22.   As per claim 2, Kail and Nakamura do not specifically teach spawning within the

computing system of the process module a connection monitor task;

23.   spawning from the connection monitor task within the computing system of the process

module a first sensor messaging task;

24.   transmitting an acknowledgement of the command to get reportable specification from

the first sensor to the computing system of the process module; and

25.   transmitting an acknowledgement of the reportable specification message from the

computing system of the process module to the first sensor. Steen teaches spawning within the

computing system of the process module a connection monitor task, (e.g. col. 11, line 4 – col. 12,

line 21);

26.   spawning from the connection monitor task within the computing system of the process

module a first sensor messaging task, (e.g. col. 11, line 60 – col. 12, line 56);

27.   transmitting an acknowledgement of the command to get reportable specification from

the first sensor to the computing system of the process module, (e.g. col. 9, line 63 – col. 10, line

29). It would be obvious to one skilled in the art at the time the invention was made to combine

Steen with the combine system of Kail and Nakamura because

28.   Steen does not specifically teach transmitting an acknowledgement of the reportable

specification message from the computing system of the process module to the first sensor.

Kosugi teaches transmitting an acknowledgement of the reportable specification message from

the computing system of the process module to the first sensor, (e.g. col. 8, lines 28 – 48 & col.

9, lines 18 – 29). It would be obvious to one skilled in the art at the time the invention was made

to combine Kosugi with the combine system of Kail, Nakamura and Steen because it would be

more efficient for a system to utilize the properties of an acknowledgement signal so in case of a

bad transmission the sensor would know that the computing system did or did not get the signal

and to retransmit the signal.

29.   Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kail, Nakamura,

Steen, Kosugi as applied to claims 1 & 2 above, and in further view of Sandelman et al.

(6535123) (hereinafter Sandelman) and Chari et al. (6425006) (hereinafter Chari).

30.   As per claim 3, Kail, Nakamura and Steen do not specifically teach transmitting

command to get an alarm table command from the first sensor to the computing system of the

process module;

31.   transmitting an acknowledgement of the command to get the alarm table from the

computing system of the process module to the first sensor;

32.   transmitting an alarm table from the computing system of the process module to the first

sensor, wherein the alarm table designates the number of alarms, alarm identification numbers,

and descriptions of the alarms; and

33.   transmitting an acknowledgement of the alarm table from the first sensor to the

computing system of the process module.

34.   Sandelman teaches the use of routing tables and router that are connected to sensor and

other networking devices that could be interpreted as transmitting command to get an alarm table

command from the first sensor to the computing system of the process module, (e.g. col. 3, lines

20 – 65 & col. 8, line 53 – col. 9, line 15);

35.   transmitting an alarm table from the computing system of the process module to the first

sensor, (e.g. col. 3, lines 20 – 65 & col. 8, line 53 – col. 9, line 15). It would be obvious to one

skilled in the art at the time the invention was made to combine Sandelman with the combine

system of Kail, Nakamura and Steen because it is common knowledge that when a new router is

installed and turned on, it requests from other networking devices a routing table so to update its

table and route information so to act as an interface to at least one of the sensors that would be

connected to it.

36.   Sandelman does not specifically teach transmitting an acknowledgement of the command

to get the alarm table from the computing system of the process module to the first sensor;

37.   transmitting an acknowledgement of the alarm table from the first sensor to the

computing system of the process module. Kosugi teaches transmitting an acknowledgement of

the command to get the alarm table from the computing system of the process module to the first

sensor, (e.g. col. 8, lines 28 – 48), and Steen teaches transmitting an acknowledgement of the

alarm table from the first sensor to the computing system of the process module, (e.g. col. 9, line

63 – col. 10, line 29). It would be obvious to one skilled in the art at the time the invention was

made to combine Kosugi and Steen with the combine system of Kail, Nakamura, Steen and

Sandelman because if the computing system and the first sensor could not acknowledge each

others transmissions the system could accumulate transmission errors and improper updating of

the measurements that the sensor detects. Chari teaches wherein the alarm table designates the

number of alarms, alarm identification numbers, and descriptions of the alarms, (e.g. col. 4, lines

23 – 38). It would be obvious to one skilled in the art at the time the invention was made to

combine Chari with the combine system of Kail, Nakamura, Steen, Kosugi and Sandelman

because it allows the user to view the alert log file and keep track of each type of alert and when they occurred.

38.   Claims 4 – 9 and 16 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kail, Nakamura, Steen, Sandelman, Kosugi and Chari as applied to claims 1 – 3 above, and in further view of Halpern (5301122).

39.   As per claim 4, Kail, Nakamura, Steen, Sandelman and Chari do not specifically teach transmitting command to get time and initialization data from the first sensor to the computing system of the process module;

40.   transmitting time and initialization data from the computing system of the process module to the first sensor. Halpern teaches transmitting command to get time and initialization data from the first sensor to the computing system of the process module, (e.g. col. col. 11, lines 13 – 49);

41.   transmitting time and initialization data from the computing system of the process module to the first sensor, (e.g. col. col. 11, lines 13 – 49). It would be obvious to one skilled in the art at the time the invention was made to combine Halpern with the combine system of Kail, Nakamura, Steen, Sandelman and Chari because of similar reasons stated above and it would be more efficient in the updating process to have time and initialization data so when the computing system does attempt to update its information the computing system can compare the two different times and initialization data and to determine which ones are the latest versions of information to save.

42.   Halpern does not specifically teach transmitting an acknowledgement of the command to

get time and initialization data from the computing system of the process module to the first

sensor;

43.   transmitting an acknowledgement of the time and initialization data from the first sensor

to the computing system of the process module. Kosugi teaches transmitting an

acknowledgement of the command to get time and initialization data from the computing system

of the process module to the first sensor, (e.g. col. 8, lines 28 – 48), and Steen teaches

transmitting an acknowledgement of the time and initialization data from the first sensor to the

computing system of the process module, (e.g. col. 9, line 63 – col. 10, line 29). It would be

obvious to one skilled in the art at the time the invention was made to combine Kosugi and Steen

with the combine system of Kail, Nakamura, Steen, Sandelman, Halpern and Chari because of

similar reasons as stated above.

44.   As per claim 5, Kail, Kosugi, Steen, Sandelman, Halpern and Chari do not specifically

teach transmitting a process related command related to the execution of an action in the process

chamber from the computing system of the process module to the first sensor;

45.   executing the action in the process chamber, wherein said action relates to the processing

of semiconductor related devices; and

46.   transmitting an acknowledgement of the process related command from the first sensor to

the computing system of the process module. Nakamura teaches transmitting a process related

command related to the execution of an action in the process chamber from the computing

system of the process module to the first sensor, (e.g. col. 3, line 35 – col. 4, line 67);

47.   executing the action in the process chamber, wherein said action relates to the processing

of semiconductor related devices, (e.g. col. 3, line 35 – col. 4, line 67). It would be obvious to

one skilled in the art at the time the invention was made to combine Nakamura with the combine

system of Kail, Kosugi, Sandelman, Halpern and Chari because it would be more efficient for a

system to remotely have the ability to execute a process to different semiconductor related

devices as opposed to having one computer for every one process chamber.

48.   Nakamura does not specifically teach transmitting an acknowledgement of the process

related command from the first sensor to the computing system of the process module. Steen

teaches transmitting an acknowledgement of the process related command from the first sensor

to the computing system of the process module, (e.g. col. 9, line 63 – col. 10, line 29). It would

be obvious to one skilled in the art at the time the invention was made to combine Steen with the

combine system of Kail, Nakamura, Kosugi, Sandelman, Halpern and Chari because of similar

reasons as stated above.

49.   Claims 6 – 9 are rejected for similar reasons as stated above. Furthermore, in reference to

a second and third sensor, Kosugi teaches a second and a third sensor, (e.g. col. 6, lines 3 – 33 &

Figure 1). It would be obvious to one skilled in the art at the time the invention was made to

combine Kosugi with the combine system of Kail, Nakamura, Steen, Sandelman and Halpern

because having more then one or two sensors would make a system gather information from

different locations at a faster pace then having one sensor having to electronically relocate to a

different section of the system to gather information about the system, therefore making the

system more efficient.

50.   As per claim 16, as closely interpreted by the Examiner, Kail does not specifically teach

the reportable specification also provides possible range of data and frequency of data that will

be provided from the sensor. Kosugi teaches the reportable specification also provides possible

range of data of data that will be provided from the sensor, (e.g., col. 4, lines 18 – 45). Halpern

teaches the reportable specification also provides possible frequency of data of data that will be

provided from the sensor, (e.g., col. 3, lines 42 – 67). It would be obvious to one skilled in the art

at the time the invention was made to combine Kosugi and Halpern with the combine system of

Kail, Nakamura, Steen and Sandelman because utilizing a range of data instead of an exact

number allows a margin of error in case the sensor devices are not calibrated correctly.

Furthermore determining the frequency of when data is updated allow one to determine the

freshness of the data and whether or not the reading of the sensor is as close to real time as

possible, giving the most accurate reading at a specific time as possible.

51.   As per claim 17, as closely interpreted by the Examiner, Kail and Kosugi do not

specifically teach the reportable specification further provides whether the data needs to be

requested from the sensor or will be automatically sent. Steen teaches the reportable specification

further provides whether the data needs to be requested from the sensor or will be automatically

sent, (e.g., col. 12, line 57 – col. 13, line 31). It would be obvious to one skilled in the art at the

time the invention was made to combine Steen with the combine system of Kail, Kosugi

Nakamura and Sandelman because of similar reasons stated above.

52.   As per claim 18, as closely interpreted by the Examiner in view of 112 rejections, Kail,

Kosugi, Steen and Sandelman do not specifically teach the reportable specification provides

sufficient sensor information so that a sensor driver is not used. Chari teaches the reportable

specification provides sufficient sensor information so that a sensor driver is not used, (e.g., col.

10, line 49 – col. 11, line 23). It would be obvious to one skilled in the art at the time the

invention was made to combine Chari with the combine system of Kail, Kosugi Nakamura, Steen

and Sandelman because driver information is larger than sensor information and therefore it

would make for a faster transmission if only sensor information is transmitted.

Response to Arguments

53.   Applicant's arguments filed 07/22/2005 have been fully considered but they are not

persuasive.

54.   In the remarks, Applicant argues in substance Kail, Steen and Nakamura do not teach the

limitations of the remote sensor to automatically transmit, upon receipt of a command to get

reportable specification, the reportable specification message from the sensor to the computing

system of the process module of the substrate processing system so that the computing system of

the process module can use the reportable specification message, including the data type

specification therein, to receive and/or understand the sensor data subsequently transmitted.

55.   As to part 1, Examiner would like to draw the Applicant's attention to the interpretation

of claim 1. The claim limitation states that the reportable specification message is <u>at least a data</u>

<u>type specification transmitted by the first sensor</u>. This can have one interpret that not only the

type of data is sent but also other information such as the actual data. It is also well known in the

art that if data is sent and processed the data would have to have a type file extension so the

processor knows how to process the data given to it. Therefore the prior art teaches that the data

is sent with a type of file extension when requested. Furthermore, if said data were to be saved in

a database according to file type, the file extension could also provide means for doing so.

56.   Examiner notes that the Applicant's intention for the initial request is for a processing

module that has no record of the sensors ability and therefore is clear of any information

regarding the sensor upon the first request. Examiner states that the Applicant should add a

similar limitation to the claim language which could overcome the rejection as stated above.

57.   Applicant is invited to contact the Examiner for any questions that they would have to

clarify the interpretation of the claim language and for claim amendment ideas.

Conclusion

58.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

       A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this
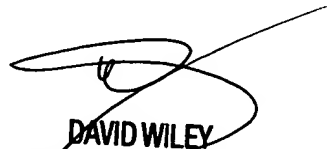
final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to David E. England whose telephone number is 571-272-3912.

The examiner can normally be reached on Mon-Thur, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David E. England
Examiner
Art Unit 2143

De *PL*

DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100